

Return  
to box  
1976



1976 NR

UPPER MISSISSIPPI RIVER WILDLIFE  
AND FISH REFUGE

Minnesota, Wisconsin, Iowa, and  
Illinois

TREMPEALEAU NATIONAL WILDLIFE REFUGE

Trempealeau, Wisconsin



# PERSONNEL

## Refuge Headquarters

|                                |                          |       |
|--------------------------------|--------------------------|-------|
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| Carl E. Pospichal              | Refuge Manager (Asst.)   | GS 11 |
| Dr. William E. Green           | Wildlife Biologist       | GS 13 |
| Retired 7/31/75                |                          |       |
| Rehired Annuitant to 9/3/76    |                          |       |
| Michael J. Willett             | Administrative Assistant | GS 07 |
| Trnsf. TC Area Office 12/19/76 |                          |       |
| Lorraine A. Joswick            | Clerk-Stenographer       | GS 05 |
| Duncan E. Green                | Auto Mechanic            | WG 10 |
| Marsha Knopick                 | Summer Aid - Int.        |       |
| e.o.d. 6/22/76--term. 7/9/76   |                          |       |
| Sheryl J. Haney                | Summer Aid - Int.        |       |
| e.o.d. 7/26/76--term. 8/23/76  |                          |       |

## Districts

|                                |                |       |                 |
|--------------------------------|----------------|-------|-----------------|
| Stanley S. Cornelius           | Refuge Manager | GS 09 | Winona District |
| Hilma L. Volk                  | " " (Asst.)    | 07    | " "             |
| Kenneth O. Butts               | " "            | 09    | La Crosse "     |
| Peter T. Smith                 | " " "          | 07    | " "             |
| Douglas M. Mullen              | " "            | 09    | Lansing "       |
| Thomas W. Jennings TFT         | Biological Aid | 04    | " "             |
| e.o.d. 6/20/76--term. 9/11/76  |                |       |                 |
| Robert E. Wilson               | Refuge Manager | 09    | Cassville "     |
| Thomas D. Atkins               | " "            | 09    | Savanna "       |
| Steven W. Breaser              | " " "          | 07    | " "             |
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| e.o.d. 10/2/76--term. 11/26/76 |                |       |                 |
| William L. Hintgen, T-Int.     | Biol. "        | 03    | " "             |
| e.o.d. 10/2/76--term. 11/26/76 |                |       |                 |



Front row, 1 to r: Atkins, Willett, Breaser, Volk, Pospichal and Cornelius; Back row: Gueswel, Wilson, Butts, Mullen, Joswick, Smith, Bill Green and Dunc Green



NATIONAL SIGN CENTER PERSONNEL



Left to right:

|   |       |
|---|-------|
| Daniel I. Samp - Illustrator Aid (PT-T)       | GS 05 |
| Terrence M. Gray - Signmaker                  | WG 05 |
| Duane A. Gaulke - Silk Screen Maker & Painter | WG 07 |
| William W. Shaw - Signmaker                   | WG 09 |
| Benjamin R. Chio - Sign Center Supervisor     | GS 11 |

Not Pictured:

Roland M. Shults - Signmaker  
Retired 2/28/76

Randy R. Moga - Summer Aid (T-Int.)  
e.o.d. 6/29/76 - term. 8/27/76

Review and Approvals

Carl E Popichal 2/11/77  
Submitted by Date

\_\_\_\_\_  
Area Office Date

Upper Mississippi Refuge  
Refuge

Robert L. Barker 2/14/77  
Regional Office Date



# Upper Mississippi River

Wild Life & Fish Refuge





## TABLE OF CONTENTS

### I. GENERAL

|  | <u>Page</u> |
|--|-------------|
| A. Introduction . . . . .                    | 1           |
| B. Climatic and Habitat Conditions . . . . . | 1           |
| C. Land Acquisition . . . . .                | 3           |
| D. System Status . . . . .                   | 4           |

### II. CONSTRUCTION AND MAINTENANCE

|                           |   |
|---------------------------|---|
| A. Construction . . . . . | 5 |
| B. Maintenance . . . . .  | 6 |
| C. Wildfire . . . . .     | 8 |

### III. HABITAT MANAGEMENT

|   |    |
|---|----|
| A. Croplands . . . . .                          | 8  |
| B. Grasslands . . . . .                         | 9  |
| C. Wetlands . . . . .                           | 9  |
| D. Forestlands . . . . .                        | 12 |
| E. Other Habitat . . . . .                      | 12 |
| F. Wilderness and Special Areas . . . . .       | 12 |
| G. Easements for Waterfowl Management . . . . . | 12 |

### IV. WILDLIFE

|   |    |
|---|----|
| A. Endangered and Threatened Species . . . . .          | 13 |
| B. Migratory Birds . . . . .                            | 15 |
| C. Mammals and Non-Migratory Birds and Others . . . . . | 21 |

### V. INTERPRETATION AND RECREATION

|   |    |
|---|----|
| A. Information and Interpretation . . . . . | 27 |
| B. Recreation . . . . .                     | 30 |
| C. Enforcement . . . . .                    | 33 |



VI. OTHER ITEMS

|                                   |     |
|-----------------------------------|-----|
| A. Field Investigations . . . . . | .35 |
| B. Cooperative Programs . . . . . | .37 |
| C. Items of Interest . . . . .    | 38  |
| D. Safety . . . . .               | .40 |



## I. GENERAL

### A. Introduction

The Upper Mississippi Refuge extends 284 miles from the mouth of the Chippewa River, below Lake Pepin, nearly to Rock Island, Illinois. The north-south length of this 195,000-acre refuge provides a great variety of wildlife habitats. An interspersed of life zones allows for existence of plants and animals normally found in more northerly or southerly areas.

Habitat types on the Upper Mississippi Refuge include wooded bottom lands, extensive marshes, sloughs, ponds, wet meadows and sand prairie. For most of its length the refuge is bordered by steep bluffs and wooded hillsides. Navigation pools with locks and control gates provide water management and are controlled by the US Army Corps of Engineers.

### B. Climatic and Habitat Conditions

The year 1976 was one of weather vagaries which resulted in 12 new daily temperature records in the Winona, Minnesota area. Below normal precipitation occurred during nine months of the year with only .01 inch in November, the driest November in history, breaking the previous mark of .04 inch, set in 1903.

Overall temperatures were fairly close to monthly normals but abnormal temperatures occurred early and late in the year. January's mean temperature of 9.9 was about two-thirds of the normal 15.7. The December mean of 12.6 was also far below the normal 21.4. Temperatures ranged from 46 during an unseasonably mild break in mid-December to -27 degrees on the last day of the year. Except for that unusual high, December was the coldest in recent years. Twenty days of the month showed below zero readings.

The heaviest snowfall of the year was only 4.5 inches and greatest snow depth was 8 inches. There was no flood threat in 1976. The high water level reached 13.2 feet on April 5, at Winona.

Summer storms were also infrequent, with the most severe conditions on June 13. Winds of 60 miles per hour did considerable damage to trees and other property. Rainfall was scarce, either in trace or heavy amounts per occurrence. May showed 2.62 inches of rain which fell during 48 hours in mid-month. Normal is 4.15 inches.

June showed 2.04 inches, much of which fell the last two days of the month, less than half the 4.87 normal. July was the wettest month of the year with 4.32 inches in three rainfalls, slightly above normal. Twenty-two days in August were without precipitation. Total rainfall in 1970 was 21.43 inches, compared to a normal of 31.37 and a 1975 total of 35.70 inches.



River conditions were generally low and stable with good production of waterfowl. In some areas such as in the Lansing District, submerged aquatics spread considerably. Lotus beds appeared in areas where they have not been observed before. Beds of millet, smartweed, and nutgrass produced heavily but many did not receive enough moisture in the fall to make them available to waterfowl.



Dried-up marsh, common in backwater areas in 1976. Beaver feed bed and lotus are high and dry.

KB-76-1



With low and stable water levels, many backwater marshes produced good stands of aquatics.

SSC-76-1



However, some beaver ponds and other furbearer habitat dried completely or fell so low that freeze-outs were imminent. Heavy fish kill is expected in those shallow areas where escape routes dried up prior to freeze-up and oxygen depletion will occur even if they do not freeze to the bottom. Unusually heavy ice had formed by the end of December. Although barge traffic continued until mid-December, they were breaking heavy ice to get through the last couple of weeks. The rate of river flow was the lowest at Lock and Dam 11, Dubuque, Iowa since it was built in 1937.



Tows caught in  
ice at  
Cassville.

REW-76

### C. Land Acquisition

#### 1. Fee Title

There is no active land acquisition program on the refuge. Many opportunities to pick up inholdings have occurred but authorizing legislation in 1924 limited the purchase price to ten dollars per acre. This has not changed, though land values have risen dramatically.

#### 2. Easements

Nothing to report.

#### 3. Other

Nothing to report.



## D. System Status

### 1. Objectives

Refuge objectives are considered in development of Annual Work Plans and in all operations. The objectives for this refuge were written for the total areas. It is planned that these will be reviewed and rewritten by district. Since the refuge area is so extensive and diverse, this is a legitimate consideration.

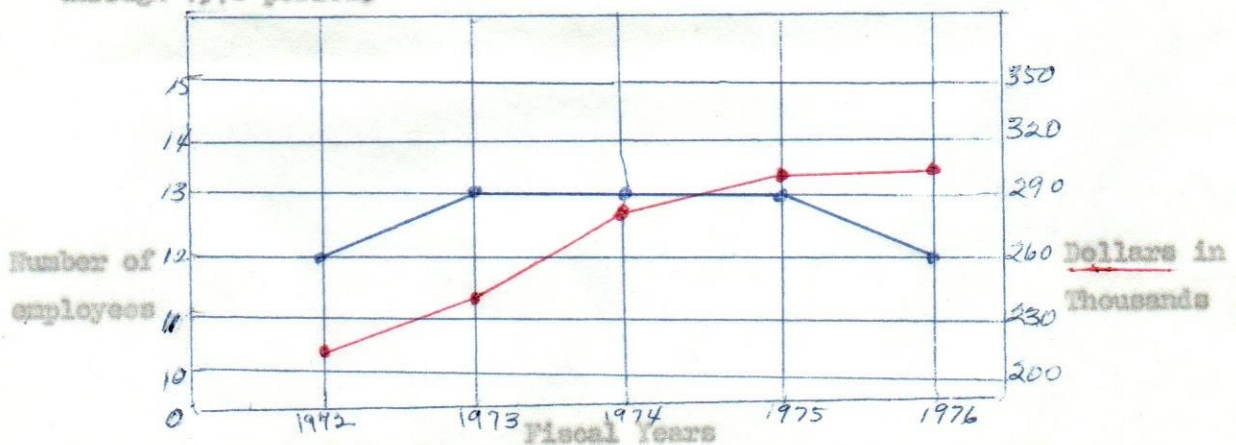
It is presently felt that although the Upper Mississippi Refuge has exceeded its waterfowl maintenance objective, this should not place a constraint in that area. Changing habitat in other areas is making an impact on refuge use. The past few years have shown a dramatic increase in use of the refuge pools by canvasback ducks while some other areas show diminished use. These birds have been protected in varying degrees in recent years because of concern over their status in numbers. A specific management plan for this bird has been drafted and objectives are being developed for its benefit. The refuge is providing for their requirements during migration but much remains to be learned concerning these needs and what determines their quality off as well as on the refuge.

Inflationary restrictions on interpretation and education objectives will cause curtailed, phased out and lower quality experiences through reduced maintenance capability and reduced regulatory actions.

### 2. Funding

Total funding increases in recent years have not kept pace with the increasing costs. There was basically a stable number of staff members with a number of transfers involved. The pattern of twelve in 1972 and twelve in 1976 reflected an increasing workload with no increase in personnel. At the end of 1976 there were eleven on board. During the year there was one transfer out with no replacement and one retirement. Two positions have been pending replacement and one person changed jobs during the five-year period.

The following is a graph of refuge positions and funding over the 1972 through 1976 period.





During the period from 1973 when the National Sign Shop was designated as such, the budget went from \$50,000 to \$85,800 in 1976. The staff went from three full-time employees to four in 1974, five in 1975 and remained at that number in 1976. Temporary help is used in both areas, depending upon workload and availability.

## II. CONSTRUCTION AND MAINTENANCE

### A. Construction

There was no new construction on several of the refuge districts. A log retaining wall was built at the Peterson Lake Landing, Winona District. This will stop a serious erosion problem and provide improved parking facilities. The work was accomplished by the Youth Conservation Corps.



An eroding embankment at Peterson Landing was partially excavated and a retaining wall built by YCC crews. This enlarged the area and greatly improved its appearance.

SSC-76-3

In the Savanna District the West dike of Spring Lake was rebuilt and resloped by the Savanna Construction Company. This made more secure water management potential of the unit. It also assured the continued use and added safety of the tour route used by the Wisconsin Eco Center and other groups.



## B. Maintenance

### Winona District

Much of the work done on buildings, grounds and other facilities was done at the Trempealeau Refuge and is discussed in that report. YCC crews stained and painted comfort stations at three refuge landings. One-half mile of Half-Moon Landing road was graded and graveled. Mowing and brushing was done as needed and large information boards were erected at Verchota, Weaver and Half-Moon Landings.

### La Crosse District

A boat landing on the west shore of Goose Island was rehabilitated by a local contractor, refuge staff and CETA employees at a cost of \$600. Parking capacity at two launching ramps was doubled and the ramps were improved.



Barrier fence  
constructed by  
YCC crew on  
Goose Island  
to prevent  
vehicle tres-  
pass.

KB-76-5

### Lansing District

CETA students and a biological aid maintained landings, signs and public use areas on sand bars. Signs were stained, painted or replaced. Two wood duck net-trapping sites were prepared.

### Cassville District

Four fiberglass overhead doors on the warehouse were replaced with steel doors. Several break-ins and theft of gasoline occurred prior to this. The Lynn Hollow access road and parking area were rocked and graveled. The warehouse road was graveled. Rest rooms at two landings were stained and painted. Boundary maintenance work was also done.





Vandalism at  
Bagley Bottoms  
launch.

REW-76

#### Savanna District

The railroad crossing at Pleasant Creek was improved and made more safe. In the same area, 2.1 miles of access trail was graded up and 1.9 miles graveled, and floor debris and encroaching brush was cleared from fields.



Agricultural fields  
at Pleasant Creek  
were cleared of  
flood debris and  
invading willows.

TDA-76-2



The south farm access road at Spring Lake was raised and graveled, making it safe for all-weather use. The Spring Lake cross dike and remainder of the dike also received a gravel coating. The Goosepoint Overlook at Spring Lake was cleared of trees to provide better visibility for waterfowl observation.

### C. Wildfire

On November 18, a fire was started in a frozen marsh northwest of Lawrence Lake, La Crosse District. Fueled by tall grasses and pushed by a 20 mile per hour wind, the fire burned about 325 acres before it was extinguished by over 25 volunteer firemen from three area communities. The fire burned from mid-afternoon until 11:00 pm. Minnesota DNR Forestry personnel supervised the operation. A wind switch as the fire reached the refuge boundary saved an adjacent farmstead from possible damage. Effects on habitat may be beneficial. District personnel were concerned about some record and near-record trees in that area but only minimal damage occurred to forest land. The cost will be borne by the Milwaukee Railroad. At least five other fires of one to five acres were believed deliberately set on refuge islands. No serious damage occurred.

## III. HABITAT MANAGEMENT

### A. Croplands

Farming was done only in the Cassville and Savanna Districts.

#### Cassville District

Seven farming permittees raised 181 acres of corn and 20 acres of grain sorghum. In spite of low rainfall, production was good. The refuge share was 60 acres of corn and all of the grain sorghum. This was left standing. Geese use the fields in the fall and most duck use is in the spring.

#### Savanna District

There were five cooperative agreements on 162 acres of farmland. Corn and millet produced low yield in bushels but grain was of high quality. The refuge share was left for wildlife except for 700 bushels of corn harvested for banding bait. Utilization of standing crops by wildlife at Pleasant Creek was nearly complete. Up to 4,000 mallards used the Spring Lake units in late fall.



## B. Grasslands

### Winona District

A tract of native grasses in the Wabasha area has good stands of little bluestem, sand dropseed, prairie junegrass, some switchgrass and big bluestem. This area is subject to trespass by motorcycles, mini-bikes, 4-wheel drive vehicles and snowmobiles. Access areas were fenced by YCC and posted. Much of the trespass was cut off but some snowmobile use still occurs.

### La Crosse District

Three small areas were grazed for a total of 158 AUM's. A fourth unit lay idle. These are lowland pastures adjacent to permittee lands. Waterfowl nesting habitat benefits through control of encroaching brush.

A case of grazing trespass by 80 herd of cattle was noted in 1975. This area near Midway, Wisconsin was fenced by YCC crews in July of 1976. This area was severely overgrazed and waterfowl nesting habitat set back. Recovery should be fairly rapid.

## C. Wetlands

Wetlands management on the Upper Mississippi is dependent upon water control by the Corps of Engineers for navigation and flood control.



The snowmobile engine and small propeller converted this flat into an extremely useful craft for low water and thin ice conditions.

SSC-76-2

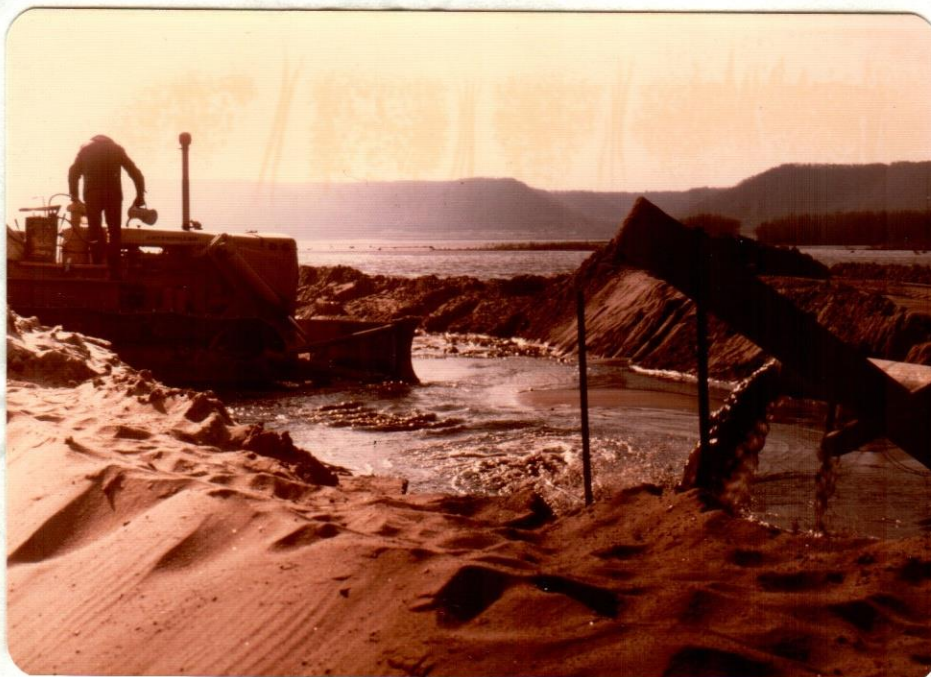


Refuge personnel participate in work groups of the Great River Environmental Action Team "GREAT" in an effort to improve channel maintenance procedures and thus prevent or reverse detrimental effects of spoil disposal.



Dredge spoil deposited along the navigation channel. In many cases this material ran down the back side into valuable marshes.

SSC-76-5



Now, through GREAT, attempts are being made to contain the spoils and find beneficial uses outside of the flood plain.

SSC-76-5



Site inspections are made prior to dredging and recommendations presented to dredge crews. The Fish and Wildlife and Side Channel Work groups are especially important in this regard. Flood Plain Management and Recreational work groups also get active participation from the refuge staff. Beneficial uses through off-site disposal is geared to remove sediment from the flood plain. Close contact is maintained with participating states and the Corps under GREAT funding, the Study Report on the Weaver Bottoms was completed. One of the recommendations was reduced sediment inflow by cutting flow through side channel closings. This was done using dredged material at two cuts. This work will be further evaluated. The CC Dredge Thompson was used for the work.

A closing dam at Devils Cut near Fountain City, Wisconsin was constructed through GREAT and the Corps of Engineers. This rock dam with opening for small boat traffic was built to cut down sediment flowing into Fountain City Bay. This problem threatened to bisect the bay and destroy backwater areas.

A side channel into Blackbird Slough below Lock and Dam 5A was opened by the Corps to restore movement of water and fish to an area nearly blocked off by siltation.



Rice crop in  
Bagley Bottoms.

REW-76

At Savanna the management of the Spring Lake Unit was geared to reversing vegetative succession through holding the unit at 585 m.s.l. Summer water loss could not be restored due to dry conditions so the unit fell to 582.8 by mid-October. A slight rise in river levels at that time permitted a gravity flow into the unit, bringing it up to 583.2 m.s.l. Some progress was made in halting the spread of sagittaria, lotus and willow.



Pleasant Creek units went dry. Flat and Golden Lakes were dry by mid-summer because of dike washouts. The Bonnie Lake Control leaked but this unit did not go dry until early fall. Lack of water for flooding makes these units fairly dependable only as brood habitat in years such as 1976.

#### D. Forest Lands

Although there is considerable bottom land timber on the refuge, there is presently no active timber management program. Most of this timber is annually flooded and consists of elm, silver maple and cottonwood with some swamp white oak on higher ground. This usually is in the upper portions of the pools.

#### E. Other Habitat

Nothing special to report.

#### F. Wilderness and Special Areas

##### Winona District

The Nelson-Trevino Bottoms is listed as a natural area in State and Federal directories. The 3200-acre area, along with an additional 4800 acres of state lands, comprise the largest single stand of bottom land hardwood forest remaining of the extensive post-glacial forest that was once widespread on the exposed northern sandy delta systems. Much of the area is being studied for wilderness status.

##### La Crosse District

Two areas are being reviewed for wilderness status. These are 3,000 acres in the Black River bottoms (Wisconsin) and 2,000 acres in the Root River bottoms (Minnesota). Both are mature bottomland forest with scattered marshes and sloughs.

##### Lansing District

Two areas are being considered in the Lansing District. These are the Reno bottoms immediately south of Lock and Dam 8 in Minnesota and the Winneshiek bottoms in Wisconsin, across from Lansing, Iowa.

##### Cassville District

Three areas in Iowa being considered are Twelve-Mile Island, Sny Magill bottoms and the Harpers Slough Island group. Total acreage is about 8,900.

##### Savanna District

Nothing to report.

#### G. Easements for Waterfowl Management

Nothing to report.



IV. WILDLIFEA. Endangered and/or threatened SpeciesWinona District

One of the Arctic peregrine falcons released along the Mississippi River by the FWS was reported seen near Marshland, Wisconsin in early August. The observer thought she saw a band on each leg. The released birds had a band on one leg and a radio transmitter on the other.

The status of the bald eagle is to be changed to "threatened" in Minnesota and Wisconsin. They are now listed endangered. They are fairly common migrants in the district. About 40 of them over-wintered in 1975-76. The late fall indicated few would remain due to heavy ice conditions.

Ospreys and Double-crested Cormorants nest adjacent to the Trempealeau Refuge and use the Winona District. Both are endangered under Wisconsin law.

La Crosse District

The osprey is found in all refuge districts during migration, including La Crosse. Bald eagles also use this area nearly year-around.

Lansing District

Seven ospreys were counted near the New Albin landing on August 31. They use the district in numbers of five to ten each spring and fall. Bald eagles are common, with spring peaks up to 100 and 150 in the fall of 1976. Young birds appear to be increasing in numbers each year. Weather and ice conditions largely determine extent of use of the district by eagles. The pair in the Reno bottoms raised only one young bird in 1976. Three were raised in 1975. Total young raised since the nest was discovered in 1969 totals 12 birds.

Cassville District

Bald eagles commonly use the Cassville district also. A new nest was discovered by the refuge manager. Two young were successfully fledged. Ospreys are also commonly observed on the district during migrations.





McCartney Lake  
eagle nest.

REW-76



Bald eagle at  
Cassville, Ws.

REW-76

#### Savanna District

An American Peregrine falcon was observed at Spring Lake on several occasions during the fall. This species has been observed at that location nearly every year in recent times. Ospreys peaked at five birds.



## B. Migratory Birds

### 1. Waterfowl

#### Winona District

The spring migration was nearly a month earlier than usual due to mild weather. Ducks peaked the fourth week of March at 48,510, compared to 69,000 the second week of April, 1975. However, use days March through May were 1,858,200 compared to 1,764,900 in 1975. Mallards peaked at 15,000, canvasback 14,000, scaup 7,000 and wood duck 6,200.

Nesters include mallard, black green-winged teal, blue-winged teal, wood ducks and hooded mergansers. Brood counts are difficult due to heavy cover and shallow water in brood areas. Spring wood duck flight counts were down about 50 percent but teal appeared to be up.

Wood duck banding required considerable time but the refuge quota of 200 was reached with 208 banded. Most were taken in floating traps.

The duck season opened with about 50 percent of the normal duck population in early October, but twice the usual number of hunters. Closures in other areas due to fire danger attracted many hunters to this area. But mid-October, duck numbers were up to normal. The peak was 49,110 the last week of October. The 1975 peak was 31,570. A new record peak for this district was 15,700 canvasbacks.

By the first week in December most ducks were gone due to early freeze-up. The September to December use days totaled 1,883,000.

The spring and fall peaks on Canada Geese were 1600 birds. No other species were noted during the spring and only 20 snows in the fall. Whistling swans peaked at 1200 in the spring and 2900 in the fall. The spring peak of 10,000 coots was half that of 1975 but the fall peak of 55,000 the first week of October was up by 10,000.

#### La Crosse District

Because of high fire hazard the northern portion of Minnesota was closed to hunting until late October. It is felt that many ducks remained in that area and did not reach the La Crosse district until cold temperatures iced over habitat here and caused many birds to by-pass this area.

Fall use for at least three species showed greatly reduced use. Canvasbacks registered 1,694,805 use days, down 53 percent from 1975, widgeon 826,884 days, down 42 percent and coot 3,932,950 use days, down 36 percent. River ice formed three to four weeks ahead of normal. By the first week of November, only fast-flowing sloughs and navigation channels were ice-free and waterfowl use was curtailed.





Duck hunter's boat tent, a question of camping trespass.

PTS-76-3

Manager Butts assisted the local sportsmen's club in banding 42 Canada geese in March. Wood duck banding was made more difficult because of dry conditions and fewer wood ducks than usual. The district quota of 200 birds was exceeded by 12.

Canvasbacks and redheads were again protected. Illegally killed birds collected during the hunting season were sent to the Patuxent Research Center for food study analysis. Twenty-two canvasbacks and one red-head were shipped.

One sick whistling swan was picked up on the ice but died overnight. The Wisconsin DNR planned to check the bird for lead poisoning.

#### Lansing District

The spring peak of 60,050 ducks occurred in this district April 24, one week later and 10,000 birds higher than 1975. Lower spring water levels and abundant food were probably factors. The spring checks for breeding wood ducks indicates the 1,898 birds were down 400 from 1975. Heavy wood duck harvest is believed to be the cause.

Normal spring water levels attracted twice as many nesting mallards and four times as many blue-winged teal. Young raised included 5,600 mallards, 20 blacks, 6,100 wood ducks, 5,600 blue-winged teal and 1,100 hooded mergansers.

Wood duck banding was done with net traps. The quota of 200 was reached and exceeded by two. Peak fall waterfowl use was reached the last week of October at 105,200 birds. This was 6,900 above 1975. Total fall use days increased 6 percent to 4,213,580. Canvas-back use continued to increase, showing 939,400 use days, about 118,000 more than the previous year. The peak rose from 30,000 in 1975 to 38,000 in 1976.



Geese make limited use of Pool 9. A peak of 1,000 Canadas stopped at Lansing Big Lake on April 3.

Whistling swans use of Pool 9 is usually minor. There were 20 in the spring and 300 in the Harpers Slough Closed Area November 20.

Coots peaked at 18,000 during the spring and 60,000 in the fall. The breeding population was 400 and production was 500, up from 300 in 1975.

#### Cassville District

As with other areas, the spring breakup brought early migrants into the Cassville district with the first birds noted in February. The peak spring population was down 30,000 from the 97,645 in 1975. Fewer scaup and ringnecks made the difference. Open water up the river probably caused many ducks to by-pass this district. Early fall cold weather moved birds through with the peak of 43,120 occurring the last week of October.

The largest increase was in canvastacks, up from 100 in 1975 to 4,000 in 1976. Scaup rose from 7,000 to 15,000 and ringnecks from 1,000 to 8,000. Mallards were up from 3,100 to 10,000.

Brood counts were run in June and early July. Production showed 5,928 wood ducks, 1,472 mallards and 200 hooded mergansers. Brood habitat was excellent but low water made counts difficult.

The 200 wood ducks banding quota was reached with 64 taken in bait traps and the remainder in net trap.

Hunter bag checks showed 44 percent of ducks taken, followed by 21 percent blue-winged teal, 16 percent mallards and 15 percent green-winged teal. The refuge manager again participated in the statistical bag checks run by the Wisconsin DNR as did other refuge personnel working in Wisconsin and Minnesota. This required a great amount of time taken from other duties.

#### Savanna District

Waterfowl returned to the Savanna District about a month earlier than usual. Diver use of Pool 13 was spectacular in April with 92,400 scaup there on April 2 and 140,000 on the district at that time.

Wood duck flight counts indicated an increase of 29 percent over the previous year.

Waterfowl production was above average because of favorable nesting conditions. Canada geese produced 40 young in the district, an increase. An encouraging fact was that 20 were produced in Pool 12, an area where efforts are being made to establish a nesting flock there.

Wood duck banding on Spring Lake yielded 410 wood ducks in 10 days using four floating traps. This year the age ratios favored hatching year birds and may be considered an indication of excellent production. The sex ratios favored males, which is normal.



Fall waterfowl use was less than spectacular, the peak being the lowest in recent years and less than half that of the previous fall. Many birds passed through but few remained very long. The peak occurred the last week of October, nearly three weeks ahead of normal. The early cold weather was a major factor. Because of dry conditions, several areas normally holding birds were not used in 1976. The Spring Lake peak of 45,000 was ended after an eight-year trend of increasing populations. The birds normally using Pool 13 at night, used it by day also in 1976.

The 9-day Illinois teal season opened September 11. Blue-winged teal were scarce. Bags showed as many green-winged teal as blue wings with average bag of two birds on opening weekend.

The first half of the Iowa season showed a slightly lower bag than usual. Wood ducks, most common, were down 50 percent in the bag. Green-winged teal were almost as common. Usually blue-winged teal and mallards outnumber green wings.

The Illinois duck season and second portion of the Iowa season opened October 23, with the bag well below normal at .6 duck per hunter on opening weekend. Species composition was unusual with mallards and green-winged teal taken in about equal numbers, making up about two-thirds of the harvest.

Wood ducks made up only 7 percent of the season's harvest. Hunting came to an early end when backwaters froze during early November and ice cover was permanent the third week of the month.

## 2. Marsh and Water Birds

### Winona District

About 50 white pelicans arrived on Pool 6 in early June and remained throughout the summer. Twenty used the same area in mid-June of 1975, two used the Weaver marsh in 1974 and none were noted in 1973.

Double-crested cormorants are common summer residents. A small colony was found just off the refuge but the 13 nests were destroyed by high wind in July. The Wisconsin DNR is planning erection for artificial nest platforms.

The Nelson and Idlewild great blue heron and common egret rookeries were retagged in the spring. There were 407 nests in the Nelson rookery. About 75 percent were active and 30 percent were egrets. The Idlewild rookery had 587 nests in 1976. The great blue heron rookery in the Zumbro bottoms was visited and tagged for the first time by refuge personnel. The rookery contains 71 nests in 39 trees. It is 100 percent heron and 90 percent active.

Of the 43 young great blue herons collected in June by Ecological Services personnel from five rookeries, eleven were taken from the Nelson area for pesticides analysis.



### La Crosse District

According to rookery survey data, heron and egret populations have been stable the past two years. This is further discussed under special studies.

The eared grebe, Louisiana heron and white pelican were unusual visitors to the La Crosse district in 1976. The Louisiana heron is not listed on the refuge bird list. The two dozen pelicans were present through August and September. The eared grebe was noted during a waterfowl survey by Manager Butts.



White Pelicans--

the first sighting on the La Crosse Dist. in recent years.

KB-76-2.

### Lansing District

Great blue herons and common egrets nest in a rookery in the Reno bottoms near Genoa, Wisconsin. The peak population of egrets was 600, with 400 young produced. Great blue herons peaked at 1900 and produced 700 young. A severe thunderstorm with high winds and hail hit the rookery at the peak of the 1976 nesting season, destroying many nests and young.

Green herons are fairly common throughout the district. A peak of 800 birds produced 400 young.

Black-crowned and yellow-crowned night herons plus American and least bitterns were present in small numbers.



### Cassville District

There are five active great blue heron rookeries in the district. The 1976 census indicated all were active. Butler Lake rookery in Pool 10, Iowa, has 200 active nests. Vogt Lake rookery, also in Pool 10, Iowa, has 99 active nests. Twelve-Mile Island North rookery in Pool 11, Wisconsin has 64 active nests and the South rookery has 113.

The Glenn Lake rookery in Pool 10, Wisconsin was discovered during an aerial check of refuge and has not yet been censured. About 99 percent of the active nests are those of the great blue heron and the remainder common egret. The total great blue heron population was estimated at 2085. Stable populations were indicated in all but the Twelve-Mile South group which has not yet recovered from severe wind damage in 1974.

### Savanna District

The cormorant colony in Pool 13 is the only one in Illinois and has received much attention from that state. They placed a pole with twelve nesting platforms near the two dead trees that are currently used for nesting. The first birds were seen March 29, and by late April there were 11 nests, five of which were on platforms placed in the dead trees by district personnel. These nests produced more than 20 young. The new artificial structure was not used even by loafing birds until after the nesting season. They were then often seen there. For the first time in several years, no reports of cormorants shot by hunters were received.

Loons were especially common on Spring Lake in 1976. Up to six were noted on several occasions.

Only two white pelicans were seen on Spring Lake. These were noted September 30.

Common egrets were numerous throughout the district in 1976. Over 400 were seen in the Spring Lake area alone.

## 3. Shorebirds, Gulls Terns and Allied Species

Although many exposed flats were attractive to large numbers of shorebirds in 1976, most districts reported no unusual observations. Most such sightings are made while performing other duties. A rare sighting of a Hudsonian sandpiper was made in the La Crosse District in May. Uncommon observations in the same district include dunlin and Baird's sandpiper.

## 4. Raptors

There were five sightings of golden eagles during the fall of 1976 on the Winona district. Other data are noted in IV - 1.



Peak fall observations on the La Crosse district showed 40 to 60 bald eagles. Spring migrations also use the refuge extensively.

A raptor migration study by Bill Smith, a local university student, includes some banding. He captured a prairie falcon, a western species never before recorded in Wisconsin.

The new bald eagle nest in the Cassville district is the southernmost recorded in Wisconsin. An all-time high of 115 eagles were noted on December 4.

In the Savanna district there were numerous wintering bald eagles. During a count made January 9, a total of 177 eagles, 29 percent immature, were observed. The largest group of 81 birds was seen below the Cordova power plant where a large area of open water persisted. This unusual number reflected the relatively mild weather at that time. By mid-December there were over 300 bald eagles, 40 percent of which were immature. During this period 168 eagles were seen at Dam 12 and 86 were seen at Dam 13. Record cold weather forced many to move further south by the end of the month. During the past five years, the percentage of immature birds has risen to 32 percent, more than double the 12 percent noted during the sixties.

A dead bald eagle picked up near Springbrook, Iowa on January 9, had been banded June 18, 1975 seven miles east of Watersmeet, Michigan, as a nestling. There was no outward evidence of cause of death and the bird has been turned over to SRA Nichols.

## 5. Other Migratory Birds

Snow buntings are uncommon in the Cassville district. This year 40 were seen near Potosi, Wisconsin in early October. They were noted especially early in the upper districts also. At Savanna the mourning dove is an important game species along the Thomson sand prairie. Numbers were down this year for the September 1 season opening. Windy conditions the first few days dropped the average bag to 3.5 birds. Hunting pressure dropped off after the first two days.

## C. Mammals and Non-Migratory Birds and Others

### 1. Game Mammals

#### Winona District

Red fox appear to be recovering from the siege of mange suffered in 1973 and trappers did well.

Cottontail rabbit populations remain high.



Beaver trapping has been closed on the Minnesota portion of the refuge for two years since the state season was too late for this area. Low quality pelts after March 1, are not wanted by the average buyer. At this time there is also the concern of disturbance to nesting bald eagles in the Reno bottoms. There is hope that Minnesota will work toward an earlier season for this area. Meanwhile, these populations appear to be stocking areas of lower concentrations on the Wisconsin side of the river.

Muskrat house counts were down 50 percent from 1974 and slightly below 1975. There was considerable pressure from trappers for a curtailed season or a closure. The harvest was down considerably.



Former hay meadows, farmlands and bottomland forests are now prime habitat for many species of furbearers, fish and birds.

SSC-76-6

Some deer were driven into closed areas at the season's opening since these areas were still closed for the last two days of the duck season. Access after that was difficult for island hunters due to poor ice conditions.

#### La Crosse District

White-tailed deer, rabbits, squirrels, raccoon and red fox are hunted during the state seasons. This was the first year in the past three when either sex deer hunting was allowed the first two days in Wisconsin. An estimated 35 deer were taken.

It appears that muskrats recovered from the low of 46,500 in 1975 to about 80,000 in 1976. Beaver remained around 1200 the past two years with annual harvest about 374.

Red fox are highly mobile but refuge checks indicated a lower population, probably due to high fur prices.



Opposum have shown steady increases in recent years but the present cold winter may be rough on them.

Otter sign is more commonly observed. Otter harvest has been closed for two years. The district carries about eight otter.

#### Lansing District

Low water and heavy plant growth provided excellent habitat for about 100 white-tailed deer during the winter. Hunting success was low due to heavy cover and difficult hunting conditions. Muskrat house checks showed 1,237 houses in 1976, compared to 637 in 1975. Low waters forced many rats to build bank dens.

Beaver lodges increased from 45 to 49. Low water forced many Minnesota beaver into Wisconsin and Iowa habitat.

#### Cassville District

Muskrales continued to decline since a record high was recorded in 1973 at 89,961. Trappers this year harvested 14,744 rats as compared to 26,688 in 1975. Average price was \$3.00. Beaver pelts have declined in value but the population has increased. Trappers took 148 of the estimated 800 beaver population. Prices averaged \$11.00.

Also taken by trappers from the Cassville district were 108 raccoon, 28 mink, 21 opossum and 1 red fox. Populations of all these species are stable or increasing very slightly.

Coyotes are becoming more common in this district.

#### Savanna District

Census transects and fur catch reports both indicate a downward trend in furbearer populations. Total fur catch was down 29 percent but the total value of the fur was only 19 percent less during the 1975-76 season. Interest remained about the same for 1976-77 seasons based on 208 permits issued. Early freeze and lower populations indicate a decreased harvest.

Coyotes are uncommon. A few reside in the Savanna Army Depot. One was taken at Spring Lake.

Signs of river otter were noted in Pool 12, the Marcus bottoms of Pool 13 and Meredosia bottoms of Pool 14. It is most common in Pool 12 but sightings have been common in Pool 14.

### 3. Resident Birds

#### Winona District

A smallpheasant population uses the limited upland habitat on the refuge. Ruffed grouse are fairly common on the higher islands.



La Crosse District

Bobwhite quail were not noted this year. This is marginal range for this bird. Pheasants were noted along the common boundary with a local game farm.

Lansing District

Wild turkeys continue to spread from the Reno, Minnesota stocking site as well as from such sites between Lansing and New Albin, Iowa. More than 200 use the refuge bottoms during fall through spring.

Ruffed grouse are also found in that area.

Cassville District

Ruffed grouse appear to be increasing in numbers on refuge islands.

Savanna District

Nothing significant to report.

4. Other Animal LifeWinona District

A massasauga rattlesnake was seen by a YCC enrollee near the Nelson dike. This species is considered rare to endangered in Wisconsin, only recently fairly common.

A local commercial fisherman who uses a horizontal scanning sonar, one of only five of its kind in the United States, indicates a decrease in school sizes among rough fish. He can scan a 5-acre area and believes the decrease is due to increased fishing efficiency through use of sonar.

La Crosse District

Nothing of consequence noted.





Ice fishing shanties  
on a "hot spot"  
south of Goose  
Island in Pool 8.

KB-76-4

#### Lansing District

Low water concentrated rough fish and permitted heavy hauls. Sport fishing was excellent, with large catches of bullheads, bass, crappies, bluegills, and walleyes especially at the Lansing area.

#### Cassville District

There appears to be a definite decline in the number of snapping turtles and soft-shelled turtles in this district. It would be desirable to study the cause.

#### Savanna District

Low water and snow-covered ice led to a significant fish kill in the Marcus bottoms, Pleasant Creek, Potter's marsh, Spring Lake, Pin Oak and isolated backwaters. These included carp, shad, drum, bullhead, striped bass, large-mouth bass, crappie, and sunfish. A summer kill also occurred because of low water which trapped fish. Another winter kill is expected. Thirty-two permits for commercial fishing were issued on Spring Lake. Catch was buffalo, 12 tons; drum, 7 tons; carp, 10 tons; paddlefish, .5 ton. Fishing pressure was down.





Commercial fishing supplements the local economy and supplies metropolitan food markets.

TDA-76-3.

Snapping turtles appear to be declining. Areas which held many large turtles now produce only a few small ones. Both number and size have declined. They are highly prized as food in this area and can be sold in local fish markets. State regulation control methods of taking, but over-harvest appears to be the problem on this slow-growing species.



## V. INTERPRETATION AND RECREATION

### A. Information and Interpretation

#### Winona District

Three information boards were erected at landings, showing maps, hunting information, duck identification and regulations. Canvas-back closure signs were posted at several landings.



YCC crews transplanted willow shoots and reed canary grass to vegetate Weaver marsh inlet plugs.

SSC 76-7

#### La Crosse District

A self-guided foot trail .4 mile in length on Goose Island doubled in use over the past year. There were 400 visits in July alone. This was almost totally use by adjacent campers. An interpretive display is located adjacent to the Interstate 90 rest area at Lock and Dam 7. This is a 3-panel display. About 130,000 visitors registered at the Center in 1976. It is estimated that 10,000 viewed the display, and increase in 10 percent.

Two EE classes from Lakeville, Minnesota used the refuge during the summer.



Lansing District

Refuge tours for high school and college students were held but present staffing does not allow an extensive program. Signs, maps and leaflets are available at the office.

Cassville District

Although there are no EE facilities at Cassville, tours and demonstrations are fairly common. There are three state parks adjacent to the district and one national monument. These provide a large amount of this type activity.

Savanna District

The Spring Lake area continues to increase in popularity for tours and bird observation. Fourteen of these organized groups used the area. The Thomson Eco Center used the district for EE activities involving 558 students. The Thomson sand prairie is also popular. The Millers Lake bottomland nature trail suffered only minimal flood damage. Plans were being made to rebuild the trail in 1977.



Over 500 students used Spring Lake for EE purposes under the guidance of the Thomson Eco Center this fall.

TDA-76-1

2. Off-RefugeWinona Refuge

Thirty-four programs were presented to 2950 persons. Sixteen were during wildlife week and two on careers. WKBT-TV of La Crosse taped portions of a prescribed burn at Trempealeau NWR for their 6 PM news. News releases were issued on trap tag sales and canvasback regulations.



District personnel assisted with preparation and manning La Crosse Sport-O-Rama displays. Meetings attended included those on ice jam contingency, Weaver Marsh Symposium, Gale-Strick-Trempealeau H.S. Teach-in on Twin Cities sewer discharge proposal, Dutch elm disease seminar, Public meeting on the Lansing Power line crossing, numerous "CREAT" work group meetings and on-site dredge site inspections.

#### La Crosse District

During National Wildlife Week, district personnel gave 42 programs in area schools. Some were presented the following week. About 4,500 students attended.

The La Crosse Sport-O-Rama displays stressed the canvasback story with emphasis on the importance of the La Crosse district for research activities and in providing favored habitat. Also emphasized was a better understanding of the refuge. Slide-tape and movie programs were shown many times during the weekend show. Attendance at the show was 7,500 persons, up about 1,000 from 1975.

Ken Brown of the La Crosse Tribune was an excellent cooperator with refuge personnel and his coverage of refuge activities ranged from nearly full-page illustrated spreads to announcements and messages. The news anchor man for a local TV station has cooperated on two presentations and more are planned for the coming year.

New pool maps for this, as well as the other districts, were a welcome addition to public information available.

#### Lansing District

Five slide or film talks were presented to persons in towns adjacent to the refuge. The district manager was active in the New Albin Community Club, Lansing Lions Club and Lansing Lions Volunteer ambulance.

#### Cassville District

Presentations regarding the refuge were made to local groups throughout the year. During National Wildlife Week, all schools in Cassville, Wisconsin and Cuttonberg, Iowa were presented programs.

#### Savanna District

The district manager served as a member of the Carroll County Environmental Education Advisory Council. This group functions through the Thomson Eco Center and plans to conduct teacher workshops.

News releases during the year were submitted to the Savanna, Illinois, Dubuque, Iowa and Clinton, Iowa newspapers. Programs were presented to various groups such as boy scouts, sportsmen's clubs and service organizations. A program was given at Shimer College for county career days.



## B. Recreation

### 1. Wildlife Oriented

#### Winona District

Opening of the Minnesota duck season saw record numbers of hunters on the Minnesota side of the district. About 1,500 participated in the Minnesota opening and 1,000 in Wisconsin. Severe drought and fire danger in northern Minnesota forced closure of duck hunting there. The hot weather, crowded conditions and few ducks early in the season were a let-down. Later season hunting was much improved. An estimated 7,880 hunters killed 15,500 ducks, 65 Canada geese and 750 coot. Mallards, wood duck, widgeon, scaup and ringnecks were most common in the bag.

During the 1975-76 trapping season, 230 trappers reported 19,302 muskrats taken for a value of \$60,485.78. This take was down from the 30,000 rats taken each of the past several years. Average price per rat was \$3.13. Thirteen mink brought \$10.29 each, 25 raccoons at \$14.36 each and 260 beaver averaged \$24.80.

Fishing was the most popular form of recreation on the district with an estimated 321,000 visits for that purpose.

#### La Crosse District

Goose Island, comprising over 700 acres of varied habitat ranging from upland oak forest to ponds and sloughs is the single most used area in the district for non-consumptive wildlife-oriented recreation. Two hundred acres are developed into a county park. Wildlife observation on the adjoining waterfowl closed area, photograph and canoeing are popular activities there. Annual use figures there run between 200,000-250,000.

Sport fishing is by far the most prolific type of use on the district with 200,000 visits in that activity. Fishing use was about the same in 1975.

Waterfowl hunting is another important recreational activity. A statistical survey of use and harvest was again in effect. Refuge personnel did much of the sampling in cooperation with the Wisconsin DNR. One drawback of the survey is that information is not available until months after the close of the season and data are not reliable on a pool or district basis. The use figures for the district in 1975 showed 40,000 visits. Hunting quality declined as crowding, sky-busting and rivalry for choice spots increased.



Fur trapping on the Upper Mississippi has almost left the recreational status and become a business. With muskrat pelts selling for over 5 dollars each, the trapper must contend with crowding, trap and fur theft, "territorial strife" and general problems situations. Effective enforcement is difficult with limited personnel.

In 1976, there were 525 trapping permits issued in the La Crosse district. The income to the local economy should approach \$200,000 as the maximum income per permit is 5 dollars to the government.

Floating structures called boathouses range from primitive boat shelters to sophisticated cabins or living quarters with no provision for boat storage. These are under permit through the Corps of Engineers and the refuge. Many problems of sanitation and their questionable compatibility with refuge objectives have initiated meetings with the Corps to solve some of the problems involved.

#### Lansing District

Fishing activity rose by 5,000 visits in 1976 to a high of 136,000.

Hunting activity brought 820 visits for deer but success was poor. Deer were common but cover and access were difficult obstacles.

Waterfowl hunts totaled 11,330. Most marshes in the Reno bottoms were dry, making a poor season for Minnesota hunters there. The first Salva opening was fair, as was Wisconsin's but the second opening of the split season was excellent. It remained that way through November 10, in Iowa and Wisconsin, with many limits of mallards and widgeon.

One hundred and sixty three trappers bought permits in the Lansing district, a decline of 43. Total muskrat catch continued to drop, with only 12,905 reported for 1975-76 season. Heavy trapping is believed to have an effect on the total population.

#### Cassville District

Fishing accounted for 950,000 activity hours in 1976. This was a drop of 300,000 from 1975 but could probably be tied to shallow water and limited access to favored fishing spots.

Duck hunting in Iowa and Wisconsin opened with 80 degree temperatures. High hunting pressure continued for only a few days and weekday hunters were hard to find.

Small game hunting was fair on the fringes of river shoreline. Rabbits and squirrels were taken.



Raccoon hunting pressure increased with the value of the skins. These brought up to 25 dollars each.

This district gets little deer hunting use in either Iowa or Wisconsin.

Trapping bought 283 permittees to the Cassville district. Clear ice made 'rat runs easy to locate. Many prime areas were hit as many as three times by different parties.

#### Savanna District

The number of duck hunters on the river increased because of dry off-river conditions. Crowding and conflict became more common. Illinois attempts to regulate spacing of hunters with a set of complex and confusing blind regulations. There are numerous conflicts as a result. On the Iowa side of the channel there are no regulations on blinds imposed and conflict is usually minimal. Crowding made problems on both sides in 1976 but only for the opening weekend. Pressure dropped rapidly.

## 2. Non-Wildlife Oriented

#### Winona District

The dry spring, summer and fall brought 49,300 visits for campings, 99,900 for recreational boating and 50,250 for picnicking. Swimming and water-skiing were associated activities. Access to the district is served by 11 Federal landings, 12 cities, 20 private and 6 state access areas.

#### La Crosse District

This category is tied directly to public use of the river and its sandbars--pleasure boating sandbar camping, picnicking, water skiing and such activities. The refuge provides access areas, participates in litter cleanup and enforcement. This use of the refuge is tremendous, reaching 393,700 visits or a 219 percent increase over 1975. Conditions were ideal, with little rain and mild temperatures, which encourage such use. Base data came from periodic people and boat counts, people and car counts at Goose Island and the regular Goose Island Campground use inventory.

#### Lansing District

Camping, picnicking, swimming, boating and related activities brought 66,200 visits to this district, down 1,600 from 1975. Weather and temperature conditions were ideal but water levels were low.



### Cassville District

Much water-oriented activity takes place adjacent to or on sandbars along the navigation channel. This type of use is heavy on the district. The total usually runs over 2,000,000 activity hours and has remained fairly stable the past two years.

### Savanna District

Water-related activities are heavy in the Savanna district. The demand remains high on district habitat and access facilities.

## C. Enforcement

### Winona District

Canvasback shooting was worked over by a team of special agents who remained in the area through the period of heavy canvasback use. District personnel and agents made 25 cases in the Weaver area. Of these, 18 were can cases. Agents made 40 cases on the refuge during this period. Two local radio stations publicized the canvasback situation and the expected heavy patrol through interviews with agents and refuge personnel. News releases were sent to all papers in the general area. This information also made the Metropolitan newspapers. Warning signs were posted at hunter access points. The usual fine was \$100.00. Hunting pressure fell off but those who remained were quite careful. The problem remains, however.

The new airboat was a great asset to the district in trapping patrol. Ice conditions early in the season were too heavy for the usual boat and thin and dangerous for walking. The airboat permitted wide coverage. Fifteen trapping violations were found covering four types of violations, including no permit, no tags, too close to house and before season.

A fence was erected to protect a grassland area below Wabasha from off-road and other vehicle trespass.

The "no boat moorage" at landings was enforced and areas were cleaned up considerably. In addition, the rezoning of docks and structures away from the Peterson Lake landing removed some real eyesores from the district.

### La Crosse District

Enforcement of regulations takes up a high percentage of district personnel's time, especially during hunting and trapping seasons. About 50 man-days were spent on patrol during that period. Canvasback protection was a major factor. District personnel made 10 cases on canvasback hunting violations. Early freeze out canvasback use of the refuge in 1976.



Fluoroscopy of 500-600 adults indicated about 30 percent carried body shot and a smaller sample of immatures showed 7-8 percent body shot. Similar studies in 1975 revealed over 22 percent of the adults and 8 percent of the immatures were carrying lead. Special agents in Wisconsin were tied up with Horicon Refuge patrol and state wardens were tied up with deer patrol, leaving the entire problem largely in the hands of district personnel.

Trapping enforcement brought 11 cases to prosecution. These do not include several juveniles and numerous illegal traps confiscated without locating the offenders.

Many violations such as littering, various trespass, destruction of signs and other property, illegal structures, marijuana cultivation and other non-permitted activities could not get adequate attention with present staffing. Boat camping to hold favorite hunting spots is a violation of camping regulations but so far it has been a frustration trying to get the cases prosecuted.

#### Lansing District

The point system on waterfowl made reordering a common practice and one which was difficult to nail down.

The Jackson Island illegal file case came to trial March 15 after nearly three years of legal delays. Private landowners attempted to block access to Jackson Island lake with a dam. The Corps of Engineers and Fish and Wildlife Service successfully argued that the cut was navigable and could not be closed. The private landowners are appealing the decision.

#### Cassville District

One man on 36,000 acres of wildlife habitat spreads enforcement very thin. Typical trapping cases were too close to house, no permit and trapping before season. Vandalism at the Bagley bottoms boat launch was a real problem. Twice during the summer the doors were ripped off the toilets. The second time three stainless steel paper hangers were torn from the walls and the fourth was smashed. The area was thereafter patrolled on weekend nights by Township police.

#### Savanna District

Shortage of personnel made enforcement a matter of priority with consumptive use getting most attention. The conduct of trotliners in Spring Lake improved considerably after confiscation of numerous illegal devices. Seven cases of fishing trespass were made at the Spring Lake pump enclosure.



Teal season violations were few because of low hunter participation. Regular duck season cases were down and no cormorants were known to be shot this year.

Trapping enforcement included cases of pre-season staking and sets too close to houses.

Two incidents of vandalism were noted. A new 4 x 8 foot sign at Goosepoint lookout was stolen. Vandals broke the lock and entered the Spring Lake pumphouse. They broke the light, broke the gate at the pump and destroyed a "no trespassing" sign. Attempts to damage pump controls were unsuccessful. It is possible that rocks were thrown into the pump pit and this would require cleanout prior to use of the pump.

## VI. OTHER ITEMS

### A. Field Investigations

#### Winona District

Weaver marsh was studied in depth by Winona State University and St. Mary's College of Winona, Minnesota to determine causes of decline in habitat quality and remedial measures to employ. Funding was arranged through GREAT. When the area was first flooded in 1935 the flood plain forests were out and the stumps left. Heavy stands of phragmites protected the resulting marsh from wave action and excellent conditions for production of aquatic plants prevailed. The natural levee along the river was eventually cut through in 16 places by high water. Sand from dredging activities was placed along the riverbank and much of this was redeposited on the marsh by flood waters. At the present time about one-third of flood waters and one-fourth of normal flow passes through the area. Thus, what was once a marsh is now a riverine environment for much of the year.

Emergent aquatic vegetation declined between 1940 and 1965 when the decline was accelerated. Wildlife use declined along with marsh quality. The phragmites could not become reestablished under the constant flooding.

Biological improvements require reducing riverflow through the area, decreasing wave action and increasing diversity of habitat. Two small cuts were blocked with dredged material. The effect will be monitored for value of possible future closures. YCC crews revegetated the backslope with willow and clumps of reed canary grass. Closures, as well as side channel openings, are considered in habitat management programs.



It is generally felt that a study of the Wisconsin side of the river in that area should be made prior to any further modifications. Impact of any changes in the riverine environment on other areas can be great and should be fully considered in advance.

The Devil's Cut partial closure discussed in III. C. will also be evaluated in depth. An additional flow into the upper end of Fountain City Bay to reduce head differential is through a culvert in Dam 5 installed by the Corps of Engineers.

#### La Crosse District

Beginning in mid-October the canvasback research team from Northern Prairie and Patuxent trapped birds in Pools 7 and 8. This study began in 1972. Birds were weighed, sexed, aged, banded and fluoroscoped. A total of 788 birds were processed in four weeks of work. An increase in body shot in adult birds from 22 to 31 percent, was not encouraging.

Rookery studies require three surveys of each rookery each year. Since observations began, there has been a 25 percent increase in number of nest trees and a 35 percent increase in the number of active nests. Great blue heron production has increased from 542 in 1972 to 1,243 in 1976. Great egret production went from 212 in 1972 to 157 in 1976. The first three years of the study showed a 48 percent drop in egret nesting activity and production. However, the past two years have indicated a modest comeback to 74 percent of the previous high population level.

Dr. James Elder, FWS environmental contaminants specialist, collected young herons from the La Crosse and three other Upper Mississippi rookeries. Check for PCB's indicated that La Crosse ranked second highest with levels ranging from 0.7 to 6.7 ppm, and averaged 2.7 ppm. Other contaminants identified included dieldrin, DDT and its metabolites DDE and DDD. It is not known what level of PCB's pose a threat to the welfare of great blue herons. Dr. Elder confirmed that environmental contamination by PCB's is largely "urban-industrial" in origin.

A more conventional threat to herons and egrets occurred in June when a thunderstorm and high winds destroyed 12 percent of the young. An actual count showed 157 herons and 37 egrets on the ground from that storm.

#### Lansing District

Nothing to report.

#### Cassville District

Nothing to report.

#### Savanna District

Nothing to report.



## B. Cooperative Programs

### Winona District

Two work study students helped with the district portion of the statistical bag check data collection. The data comes too late for refuge use and consumes much time in collection. The refuge share of counts has increased while Wisconsin share has decreased. The data cannot be pulled out by pool as district need require. The study will be completed, after which the former method of bag checks, which gave data of comparable reliability, will be resumed.

YOC projects completed on the refuge were chipping and brushing the Goose Island nature trail, sand bar cleaning, sand bar revegetation, fence construction at Wabasha grassland, construction of an erosion control retaining wall at Peterson Lake landing, tagging rookery trees, comfort station staining and painting. Further data are in the Trempealeau report.

### La Crosse District

Work projects were provided for YOC. The 24 enrollees in the non-resident camp came from La Crosse, Trempealeau and Genoa areas. Three vehicles were rented for transportation of tools, equipment and personnel to work sites. Logistics, limited project funds and some supervisory problems were encountered with the first-year camp. The district was pleased with most aspects of their work. A quarter-mile of barbed wire cattle fence to control cattle trespass and removal of three derelict boat docks and two boathouses from the river were included among those mentioned above.

Two C.E.T.A. girls assisted with office and other functions. An additional three workers assisted with field projects. All contributed substantially to the refuge program.

A work study student from U.W. La Crosse conducted bag checks and public use counts. He also handled some trapping permit sales. The work study program provides manpower for numerous necessary tasks.

The Great River Environmental Action Team has been active in 1976 and district personnel are members of the Fish and Wildlife and Side Channel work groups. Manager Butts is coordinator for the district dredge spoil inspection team as are other district managers in their districts. Progress has made in spoil placement. At one site spoil was transported by barge to the La Crosse landfill. Another dredge site utilized an old spoil island to completely contain the new spoil.



### Lansing District

The district manager acted as coordinator for on-site dredging inspection. This year the Corps of Engineers was required to justify its areas for dredging. Because of opposition from the states and the refuge, only one area was dredge in the pool in 1976. This was an unjustified "straightening" of the channel near Twin Island at the mouth of the Bad Axe river. After this project, state opposition prevented any further unnecessary dredging.

### Cassville District

The manager participated in GREAT studies. Prior to GREAT the spoil was placed on the nearest land to the dredge site. The majority of the islands are at capacity. Dredge spoil has overflowed into prime backwater waterfowl habitat. Sites must now be inspected in advance and the recommendations of the inspection team considered.

### Savanna District

Savanna District is in the area of GREAT II, Rock Island district of the Corps of Engineers. Personnel participated on three work groups: Fish and Wildlife, Side Channel Openings and Dredging Requirements. The FW work group organized on-site inspection teams. The Side channel group accomplished two openings in this district, one at Cordova, Illinois and the other north of Savanna on the upper end of Lainsville slough.

Main channel dredging was at a record low. Because of low water, shoaling did not occur as is normal. Wing dams functioned to contain the current due to low flows. Only one site in the district required dredging. That was at Pleasant Creek and only 16,500 cubic yards were moved. This was placed on the Savanna Army Depot.

The Meredosia Levee project was completed this year. The project included raising Hiway 84 by pumping fill from the river. District involvement was to work with the contractor in preserving habitat along discharge pipeline corridors. This was accomplished with fine cooperation from the contractor.

## C. Items of Interest

### Winona District

Stan Cornelius attended a two-day Civil Service EEO course.

Stan Cornelius and Hilma Volk received Minnesota Pesticide Applicator licenses. They and Carl Pospichel attended training at Rochester, Minnesota and wrote examinations which qualified them for insecticides, herbicides and fungicide applications. In addition, Stan was certified for roadway right-of-way application.



### La Crosse District

Habitat enhancement work in the district began with elimination of cabins from FWS lands. This year two major grazing trespass areas were fenced out and plans were made to phase out refuge grazing. The local sportsmen's club permit will be phased out by 1980. Boat-house structures are being reevaluated and their existence on refuge lands reconsidered. The most recent action involves a radio station permit on government land. Grazing and farming activities occur on the permit site. The permit prohibits any use of the land except for radio station operations. The station owner feels he should continue with these activities since he has been doing it for twenty years. This points up the need for staying on top of seemingly low priority tasks. The Corps of Engineers is cooperating.

Late in 1975 a group of property owners adjacent to Lake Onalaska formed a lake rehabilitation district. Under the new lake rehabilitation law of June, 1974, property owners and local units of government can form lake districts for the purpose of receiving state funds to correct lake problems. Lake Onalaska, through the natural process of eutrophication, has been slowly changing over a period of forty years. The lake shoreline is refuge land but the land just beyond is heavily developed for residences. These property owners who use the refuge shoreline complain of "weeds" and shallow water which interfere with their swimming and boat operations. As a result of this, State of Wisconsin approval was given in May to allow limited chemical control of vegetation near shoreline home sites. The refuge was concerned because this general area is a major canvas-back use site during the fall migration. The control area was exceeded somewhat because of currents and other factors, possibly operator performance. Chemical proposals were approved prior to application.

District personnel participated in a meeting with the FWS personnel management evaluation team (Washington office) at Winona, Minnesota on October 14.

Manager Butts attended a Civil Service equal employment opportunity training course in the Twin Cities during April.

### Lansing District

A public hearing was held August 12, at the Lansing high school to discuss Dairyland Power Cooperative's application to run a 161 KV power line across the river at Lansing. An alternate crossing site at Reno, Minnesota was rejected by Dairyland in their preliminary assessment as too long and too costly. Opposition to the Lansing crossing was high. The feeling was for a crossing at Reno or a buried line. Both the Corps of Engineers and the Fish and Wildlife Service asked for a full environmental impact statement.



### Cassville District

This past spring the warehouse on 12-mile Island was removed by a purchaser from Cuttenberg, Iowa.

The manager had assistance from two work study students from U.W. Plattville, Wisconsin during the summer.

### Savanna District

A small oil spill was observed at Savanna on March 10. It appeared to be fuel oil, probably from a commercial tow. The Coast Guard was notified.

Oil from a spill on the Maquoketa reached the Mississippi on August 27. The amount was small. It originated at a train derailment on a bridge. No cleanup was necessary but the Coast Guard investigated.

Manager Atkins completed the 16-hour course "Role of the Manager in EEO". Conducted in the Twin Cities.

Atkins attended the regional conference held during June at the Twin Cities.

Assistant Manager Steve Breaser was promoted and transferred to Medicine Lake NWR in Montana as assistant manager effective August 1.

## D. Safety

### Winona District

Stan Cornelius, Hilma Volk and Dan Mc Gill took courses in First Aid and in cardiopulmonary Resuscitation, along with other refuge and National Sign Shop personnel.

There were no lost-time accidents.

### La Crosse District

Butts and Smith took the First Aid and Resuscitation courses.

An electrical inspection of the district was completed, as were other district checks.

Two hours of defensive driving training was received at the refuge staff meeting in January.

Manager Butts was involved in a minor accident with the district's 1971 Plymouth sedan-delivery. Damage to the government car was just under \$300. The other driver was totally at fault and her insurance paid for all repairs.



Lansing District

Manager Mullen participated in all refuge safety training programs.

No accidents were recorded this year.

In early November three Wisconsin waterfowl hunters drowned while trying to reach Ferryville during a windstorm. Their 12 foot boat overturned in the middle of Lake Winnebago. Only two of the bodies have been recovered to date.

Cassville District

There were no lost time accidents this year.

Safety meetings were held at all refuge staff meetings and Manager Wilson participated in all training.

Work study students were given safety training throughout their employment.

Savanna District

No accidents occurred to refuge personnel or equipment.

Safety training included:

Breaser: 3 hour cardio-pulmonary resuscitation

Atkins & Breaser: 8 hr. general First Aid course.





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#### Personnel

1. Stanley Cornelius, Refuge Manager, GS-9, PFT
2. Hilma Volk, Assistant Refuge Manager, GS-7, PFT
3. Dan McGill, CETA Laborer, 1/16/76 - 9/3/76, Temp.
4. Paul Viner, Work-Study, 6/3/76 - 8/14/76, Temp.

#### Review and Approvals

Stanley Cornelius      1/30/76  
 Submitted by                      Date      Area Office                      Date

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 Refuge                                      Regional Office

\_\_\_\_\_  
 Upper Mississippi River Wild Life & Fish Refuge